


Multimedia Recording Kit

Manual and art by Jeff Smith and Jim Hirsch

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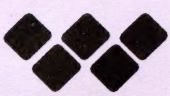


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Welcome to our Multimedia Recording Kit.

If you've been wanting to share what's happening on your computer without bringing your computer with you, then this kit is for you. With the Multimedia Recording Kit you'll be able to finally "print to video" the wide variety of information sources you've been using in your computer system such as digitized sound, graphics, animations, special effects and even include your own comments as the recording is taking place!

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Table of Contents

Kit Contents

Battery-powered audio mixer (three-channel)
Two-channel RCA style connecting cables (2)
Two-channel to one-channel RCA style cable (mixer to VCR)
Miniphone stereo connecting cable (computer to mixer)
Quarter inch stereo to miniphone adaptor
Stereo headphones
Monaural microphone

Introduction

Personal computers were meant to be just that - personal with no real reason to share what happened on the monitor with anyone else. That was the thought in the late 1970's, before the advent of the VCR, digitized sound and video, videodisc players, interactive CDs, and direct video/audio connections in typical home and school equipment (not to mention more lifelike video games). Roger Wagner Publishing is attempting to produce a paradigm shift in that with so much information being prepared in that small monitor on your computer, it's become a necessity to somehow get the picture out of the box and into a medium that can be easily shown and shared with the global audience. This can be accomplished with a large screen monitor attached to your computer (or, alternatively, an LCD overhead panel), but the results are still tied to the computer. This new paradigm requires that a person be able to share that computer-based information even with someone or a group without a computer. The answer? The most pervasive technology piece of equipment in the world next to a telephone; a standard VCR! Yes, we're at the point where our computer presentations can rival any other video-based information source and you're about to traverse the "crossroads" that will allow you to interject digital realism to your daily work.

This manual will serve as a comprehensive guide to recording multimedia projects on an ordinary VCR. The manual also provides diagrams and instructions for adding additional audio-video sources to your computer system such as video cameras, additional VCRs, laserdisc players, etc. With this kit your video recording options will range from simple videotape recording of computer projects, to creating your own "newscasts" and documentaries! You'll also learn how to use any TV to display your computer project. This could be in a classroom (saving thousands of dollars), a relative's house, a hotel room as you're getting ready for a presentation, or just about anywhere else!

The basic premise is that a videotape can travel easier than a computer and more people have VCRs than computers, so whatever project or presentation you complete on your computer will have the widest possible audience if you transfer it to videotape. The concept is actually quite simple, take the video source (your computer) and record it via your VCR onto videotape. but don't forget the audio part of the presentation which may be your computer, a CD, a cassette, or even yourself. Here's where the Multimedia Recording Kit comes in - besides containing an audio mixer that allows you to record up to three different audio inputs at the same time, it also includes the cables that are necessary to make the connections, plus a microphone and headphones are included to make the package complete.

Before you begin recording...

Things always work best when you have the necessary materials gathered and ready to go. Check to make sure you have all the necessary ingredients ready before trying the rest of this recipe!

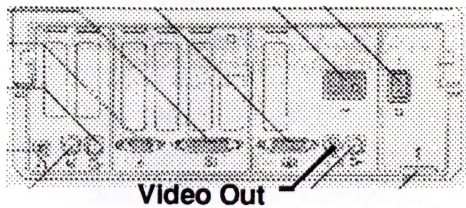
- ☞ VCR plugged into a monitor for viewing.
- ☞ Your computer close at hand with your software package loaded in and ready to play.
- ☞ The Multimedia Recording Kit unpacked with power available. Although you can use a 9 volt DC adapter (from Radio Shack, part #273-1651, $10.95) we strongly recommend you just use a 9 volt battery that gets installed in the battery compartment, on the underside of the mixer.
- ☞ Enough electrical outlets so that everything can be plugged in.

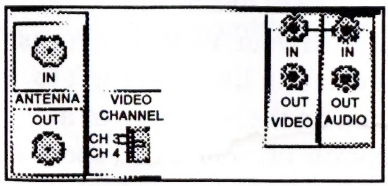
You're now ready to begin a trial recording session. In the pages that follow you'll be taken through setting up the video connections, the audio connections, the microphone connection and finally, recording to tape. Towards the end of this manual is a trouble shooting section should some problems arise. Keep in mind that you can do almost no damage to equipment as we plug and unplug the various connections. The wires we're dealing with typically carry 1 volt or less of electricity, so even hooking things up "backward" will fail to do any physical damage to the equipment, but damage to your psyche is probably unavoidable!

Video Connections

First, test your VCR/monitor combination to make certain that it is working. Put a tape in, press play and see if you get a picture and sound. If it is not functioning properly, refer to the owner's manual or your local A/V guru and get it working right! Seriously, check to make certain that you've turned on both the TV and VCR, and that the channel selection is set to three (or four). If your test tape still doesn't produce a picture and/or sound, you'll need to solve that problem before you can begin using the Multimedia Recording Kit.

Next, position your VCR/monitor, computer system and Multimedia Recording Kit in close proximity of each other (keep in mind that all the pieces need to be connected via cables, most of which are no longer than six feet). To make the video connection between your computer and the VCR will require that you take a look at the backs of both components. Taking the Apple IIgs as an example (the Apple II line all have the same video output, the Macintosh and DOS computers require adapters to achieve the same video out capabilities), the diagram shows the position of the video out connection. In all cases on the computer, you'll be looking for a connector that is commonly referred to as an "RCA connection". Now look at the back of your VCR. Most VCRs will have connections that are similar to those in the diagram. Notice that the VCR gives you a choice of inputs; one labeled antenna, the other labeled video. If your VCR only has an antenna connection available, you'll need to

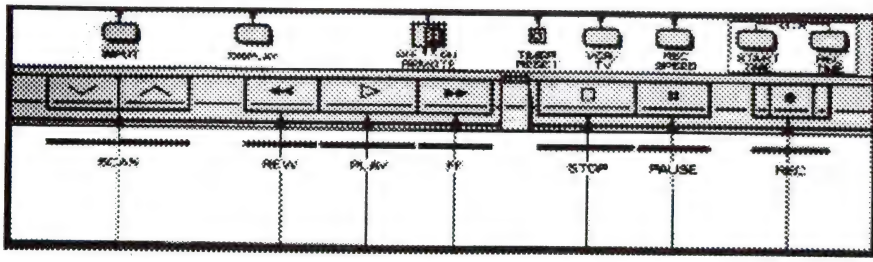




refer to the audio/video connections guide at the back of this manual for assistance. For the other 99% of VCRs still operating, you'll want to take advantage of the "pure" video connection. Depending on your VCR, this may be an "RCA connection" just like the one on your computer or it might be a "BNC connection" similar to the one in the diagram. Either connection works fine, you just need to know what cable ends will be needed to make this first connection between your computer and the VCR. If your VCR also had an "RCA connection" like the one on your computer), you'll need a cable like the one in the diagram. If your VCR had a "BNC connection" you'll need a cable with two unlike ends, or an adapter (available from Radio Shack, part #278-254, about $2.50) that will allow you to use a standard RCA cable with your BNC connector.

BNC Connector

After all that looking and deciding, you should have in your hand a cable with appropriate ends to connect your computer and VCR (if you don't have a separate "RCA" video cable, you can use one of the audio cables provided as part of the Multimedia Recording Kit - just be sure to use the same color connector in both the VCR and computer). There's no reason to wait any longer, go ahead and plug the two units together. To test and see if your VCR is ready to record the video from your computer, start up a program and get to a screen that is easily identifiable. Power up your VCR and monitor and see if the VCR/monitor displays the same picture as is being shown on your computer. If the pictures match, you're ready to move on and make the audio hookups. If your VCR/monitor is not showing your computer picture, you have a little work left to do before moving on. Using the diagram on the next page of a "generic" VCR try to locate similar controls on your VCR, specifically an "input" button, or a "VCR/TV" button and the "channel"

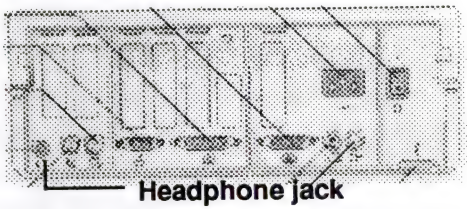


or "scan" controls. Many VCRs are set up to look for information to come in only over standard TV signals (using the antenna connection). You'll need to let your VCR know that you want it to accept a different, "auxiliary" signal, that of your computer. Without going to your owners manual, try these adjustments and see if your VCR/monitor will mimic your computer screen. First, try pressing the "VCR/TV" button once. If your computer picture now displays on the VCR/monitor, you're finished (but remember how you got the picture to work!). If that doesn't work, press the "input" button once. If that still doesn't work, try pressing the "input" button again (some VCRs accept multiple inputs). If your computer picture now displays on the VCR/monitor, remember how you got things to work and then move onto the audio connections. If things still aren't working, you have one more thing to try before reverting to the VCR owner's manual. Find the "scan" or "channel" buttons (on some VCRs this feature can only be accessed via a remote control unit) and switch below channel 2 to the "AUX" channel. All of the above methods give different VCRs a way to let computer signals be displayed and recorded. It is imperative that you make sure the signal is actually able to travel between the computer and VCR before attempting to record any projects. Black screens are never too impressive! You also now have the method to display your computer screen on any standard VCR/monitor combination for group viewing.

Audio Connections (Multimedia Recording Kit)

If you've been asking yourself "why did I need to buy this kit?", this section will give you the answer! Although it is possible from the video connections you made in the previous section for you to record "silent movies", multimedia involves the use of sound as well as video in most applications. The mixer in the Multimedia Recording Kit allows you to record not only sounds based in your computer but also to use additional sources such as a cassette player or even CD audio disks as well as a microphone for those "timely" comments. The most amazing thing is that you can have all three sound sources going at once and the mixer allows you to record all of them (including separate volume controls) at the same time! Let's look at each in turn.

First, getting sound out of your computer typically is accomplished by using the headphone (or earphone) jack. This connection is normally found at the back of your computer, similar to the one shown in this diagram of an Apple IIgs. This connection is just like the one found in personal stereo systems in that it requires a stereo mini-phone jack.



The Multimedia Recording Kit includes a cable that has that exact end on it ready for you to use! Speaking of the kit, now is the time to take a look at the back of the mixer. You'll notice that all of the connections use an "RCA connector". The cables that are included with the kit all have that type of cable end. Go ahead and plug the mini-phone jack end of the cable into your computer and plug the other two RCA ends into the Computer In connections on the mixer. (NOTE: the colors of the connecting cables don't actually matter, although for consistency you may want to plug the red

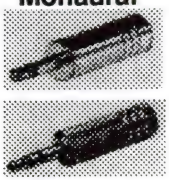
cable end into the red connector)

As usual, one question needs to be answered before we can continue. What type of audio connections does your VCR have? Typically they would be the same as those on the video side, but check it to make sure. As in the video connection, if the audio connections use "RCA connectors", the cables included with the kit are all you need. If your VCR has "BNC connectors", you'll need to purchase additional BNC adapters (Radio Shack, part #278-254) that will allow you to use RCA cables for connections. If your VCR has no audio connectors, please refer to the audio/ video connections guides at the back of this manual before proceeding. Go ahead and hook up the cables now between the mixer using the Master Out connections and the VCR audio connections. Since the mixer is built to handle stereo input and output, each of the cables has the capability for both left and right channels. If your VCR only has one audio in connection (most fit in this category), you should use the cable supplied in the kit which offers that "2 to 1" connectability.

Notice you've still got two possible audio connections that can be made as part of the Multimedia Recording Kit. Before you test the audio connections, you should also connect the microphone for a "real time" test. Believe it or not, you'll find yourself and anyone else who uses your kit, using the microphone connection more than either the computer or auxiliary input. In fact this feature of the kit will allow you to easily put "voice-overs" on Canon XAPShot video projects as well as simple editing on other videotapes (more on that in the Advanced Recording Tips section).

The microphone provided in the Multimedia Recording Kit is a monaural (single channel) type. The reason for mentioning that is that, like headphones, the connections provided need to be of the supported type for the sound to come through clearly. If you choose to purchase a higher quality microphone, you'll need to

make certain that is a monaural type as well. The distinguishing feature is that the connector will only have one black plastic ring if it's monaural, unlike stereo headphones which have two black plastic rings on the connector (see the diagram). If you would prefer to not have to hold the microphone while you're recording (your hands may be a bit busy manipulating all the controls at times), you might want to try a "tie-pin" microphone like those used in TV broadcasts (Radio Shack, part #33-1063). Not only does this option give you "hands-off" microphone recording, it comes with a longer cable that would give you more freedom to "roam" around while you're recording. Go ahead and plug the microphone into the MIC MONO connection on the front of the mixer now.



The final input (AUX)is a set of connections that would allow you to attach any other audio device, such as a cassette player, CD player, boombox, videodisc player, radio tuner, or even another mixer to your existing mixer. Notice that the connections are of the standard "RCA" type. For our testing purposes, nothing has to be attached to that set of connections now, but please be aware of the added possibilities should you choose to add some new device into the "mix" at a future recording session.

Now to test your audio connections! Make certain that you've got power to the mixer either from a battery or a power adapter and flip the power switch to on. Check to make certain that your VCR/monitor is still showing the picture from your computer screen. If you've got a computer project that has some sound in it, go ahead and load that now, otherwise, you'll just use the microphone to see if you've got some sound going. Put the volume controls on the mixer about halfway up, check to see that the volume on the VCR/monitor is also up, and then play your computer project, speak into the microphone, or both. You should hear the sound coming out of the VCR/monitor speakers if you have everything connected

properly. For actual use, you'll probably want to connect the headphones that came with your Multimedia Recording Kit into the headphone jack on the front of the mixer (either A or B), so you can hear the sounds even with the monitor speakers turned off. If you're not getting any sound out of the speakers or headphones, please refer to the Troubleshooting section in the manual.

Ready for the "real thing"? Start your computer project back at the beginning and get ready to press buttons! Seriously, before you press the Record button (or Record-Play), keep in mind that the VCR will take up to five seconds to "get up to speed" before it can actually record your video or audio. It's a good idea to start with a "black burst" (all black screen) and then move into your true graphics once the VCR has started to record. In fact, if you're redording from an Apple IIgs, it's also a good idea to set your border color to black for a more professional look. As you get to the end of the recording, keep in mind that when you press Stop, the VCR will "back up" à few seconds worth of tape as it quits recording. For that reason you'll also want to let your ending record for those extra few seconds.

With those tips in mind, press the Record button on your VCR, wait a few seconds, and then start your computer presentation. Be sure that you talk into the microphone to test the mixer as well. Since this is just a test, recording about 10 seconds worth or material is probably enough. Press the Stop button on your VCR and rewind the tape back to where you started. Press the Play button and you should be able to sit back and enjoy the show! If the audio is too low or high on the tape, remember that you can adjust the slider controls on the mixer as well as adjusting the volume on the monitor.

Your multimedia recording career is now well on its way. Besides becoming an audio/video "guru" in the course of getting everything hooked up and working, you've also released the power of

your computer into a medium that everyone can share. Remember, if it's on a computer, you can get it on tape. Is it live, digitized, or Memorex? Only you'll know for sure! But don't keep it a secret, share the techniques with everyone who will listen!

Troubleshooting

With as many connections as you might have if you connect all possible equipment together with the Multimedia Recording Kit, it's entirely possible that something may not work properly when you first try it. This section is meant to give you some general guidelines to try and solve those problems before you have to call in the A/V "whiz".

1. *If something isn't working, try disconnecting everything having to do with that section and try connecting it all again.* Read through the text slowly, checking each step carefully.

2. *Make sure the power switch is on, and the sliders are not set at their minimum.* If the switch doesn't light up when you turn it on, perhaps you need a new battery.

3. *If you are only hearing some of the sound source, check to be sure you have both channels hooked up right— and in series.* What we mean by that is that the reds all match on plugs and jacks (or Right is matched to Right if there is no color).

4. *If you suspect something is broken, or just not working, try taking it out of the equation.* For example, if you think the Computer slide bar on the Mixer is broken, try plugging the GS through the plug called AUX IN and use the AUX slide bar instead. If everything works, then maybe you were right. But, if it fails too, then there's a higher probability that the problem is in how you've connected the cables.

5. *Try a test recording of the whole thing (sort of a dress rehearsal) before you try the real thing.* Use this to get a good idea of audio levels to set for everything. With a couple of test runs, you should get a good, clear recording.

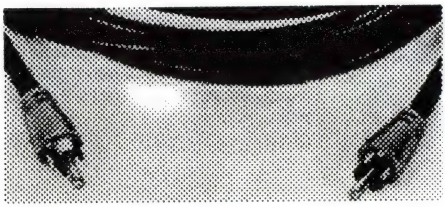
6. *Attack of the killer Hum.* If you are experiencing hum or whine, here's a couple of things we've noticed that may be causing it:
    A. DC power supply. If you've decide to use the DC power option to save batteries, be aware that that transformer is a likely cause of hum.
    B. Wire laying across something electronic with high energy can create hum or whine-- like a computer monitor, power supply, television, florescent light, microwave, etc. This can be reduced by using the computer with aluminum foil spread across your forehead. (just kidding, the correct solution is pie crust.) This can often be reduced, or gotten rid of entirely, by routing the wires elsewhere.
    C. The microphone may be too close a strong source of sound, such a s a powered speaker.

7. *Finally, if all your problem solving efforts fail, and the problem persists, call our Technical Support (619) 442-0522.* They will be more than happy to help through your problem.

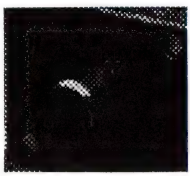
Audio/Video Connections Guides

While it's impossible to list and show all of the possible audio and video connectors you might actually see while making computer/VCR connections, this guide will describe the most common. Keep in mind that over 90% of the VCRs you'll use today will accept a standard video signal that's referred to as an NTSC composite signal. Very few VCRs accept a higher quality signal, those that do are said to use the SVHS (or Super VHS) signal. In both cases the video signal is referred to as composite, because the colors are "mixed" together for sending and receiving. Contrast that with the native Apple IIgs and Macintosh video signals which are RGB type - separate red, green, and blue signals couple with a sync signal to "get them all together". Typical VCRs cannot support those types of signals. The Apple IIgs is a special computer in that it actually was designed to send two types of video signals, both RGB and NTSC composite. Because of that, the GS has been a favorite machine to videotape from - no extra cards needed. The Macintosh, on the other hand, has never had an NTSC composite signal as one of it's features and it's only been a relatively recent development for cards and external units to be available that allow for those computers to be videotaped from. In any case, if a standard NTSC signal is available from a computer it generally uses an RCA-style connector. It's the VCRs that will cause you to possibly buy stock in Radio Shack as you attempt to get the right adaptors or cables to make the proper connections. Use this guide as exactly that; a guide to knowing the proper terminology for the different connectors.

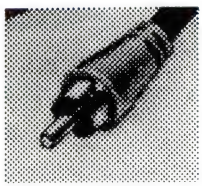
RCA Connectors: used on most VCRs as well as the Multimedia Recording Kit mixer.



Video cable
RCA connectors



RCA connector
typical VCR/
computer
(female)



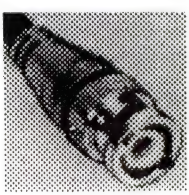
RCA connector
typical cable end
(male)

BNC Connectors: typically used on "commercial" or "high-end" VCRs

BNC connector
(note the "knobs"
used for locking
the connection)

Some units may contain
both BNC and RCA
connections

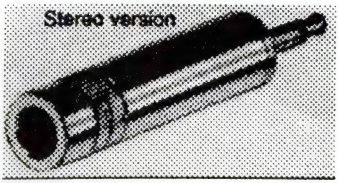
BNC connector
cable end
(twist on)



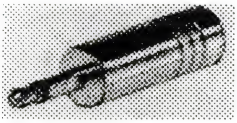
Adaptors: allow you to connect almost anything together!

BNC to RCA (probably the only adaptor you'd need)

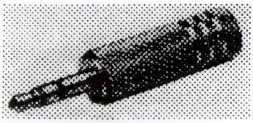
RF to RCA (to hook up to an antenna connector



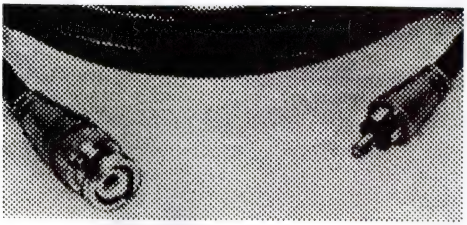
1/4" microphone to miniphone



Monaural/stereo miniphone



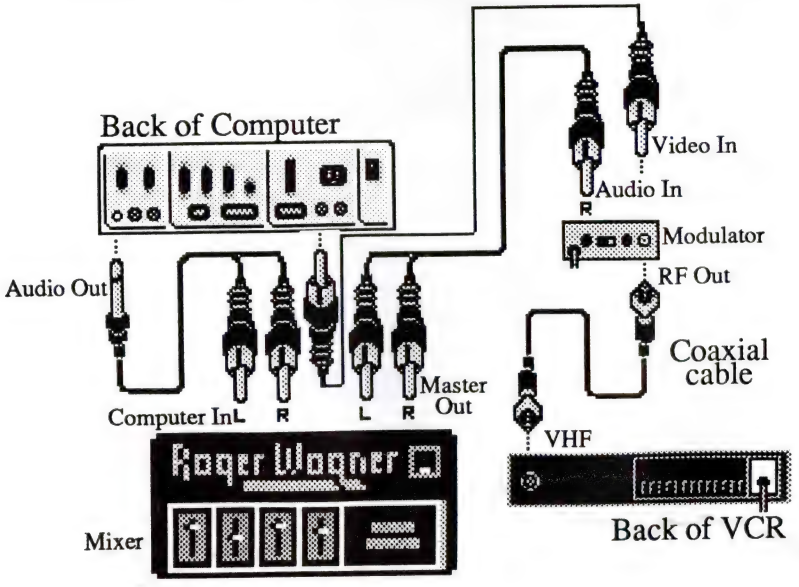
Stereo/monaural miniphone



Cable solution: BNC and RCA connections

RF (antenna) Connections

If your VCR has only an antenna (sometimes called RF) input, you'll need to purchase a couple of additional items before being able to use the Multimedia Recording Kit along with your computer. For those of you who are curious about this type of connection, it is the primary type of connection for televisions which generally receive either an antenna or cable signal. Because of that, manufacturers provided the same connection for VCRs. Since the early 80's many manufacturers have also provided separate audio and video connectors which are the ones you read about earlier in the manual. The cable used by antennas and cable connections is called "coaxial or coax" cable because it carries two signals in one cable, namely audio and video. To make a computer and the Multimedia Recording Kit work with a coax system requires a device that can take the separate audio and video signals and combine them into a signal that can be sent over coaxial cable. That device is called an "RF modulator" (Radio Shack, part #15-1273A, $30). To connect your computer to the modulator requires



a standard "RCA" type cable (see the diagram) which will run from the back of your computer to the Video In connector on the modulator. Likewise, you'll connect the Master Out from the mixer to the Audio In connector on the modulator using one of the standard RCA cables supplied with the Multimedia Recording Kit. Finally, you'll need a short length of coaxial cable (Radio Shack, part #278-969, 5 feet, $7), to connect the RF modulator to the Antenna In connector on the back of your VCR. Before testing, make certain that you have connected the audio from your computer to the mixer as well as the microphone as described in Section Four.

Advanced Recording Tips

For superior video in your recordings, try a Video Overlay Card in your Apple IIe or Apple IIGS. What is a Video Overlay Card? This is a card that fits in slot 3 that electronically replaces any one color on the screen with what is coming in through its Video-In. The normal Video-Out on the back of those machines produces a signal that is usable, but letters may look fuzzy-- sometimes to the point of not being readable. The VOC has it's own Video Out, and if you connect the VCR there, everything is much clearer.

Recording video out of a Macintosh requires some type of video card or external adaptor. Video cards come in a variety of prices and capabilities depending on the model of Macintosh you own. For the Macintosh LC the lowest cost option is the L-TV card from Lapis. This card utilizes the single slot that the LC has to produce a video out signal. Street price is about $300. The only other options that currently work for the LC are external SCSI devices that route the video signal through the SCSI port. These devices give somewhat slower response than cards and typicall cost $500 and up. For the Macintosh models that have NuBus slots, the options are much greater and include not only internal cards and external SCSI boxes, but also include external graphics boxes that can utitlize NuBus graphics display cards to drive an NTSC video signal at reasonable speed. Typical prices of the box-card combinations are from $800 and up.

All of the stuff we've hooked together assumes you only want to get video from the computer. If you find you have more sources of video than that, check out an A-B Box. These are handy devices (Radio Shack part #42-2110, $14 or part #15-1956, $25.) that let you plug multiple video sources into one side, one video out on the other and a switch. If you switch it one way, the first video source plays. If you switch the other, the second source plays. This can

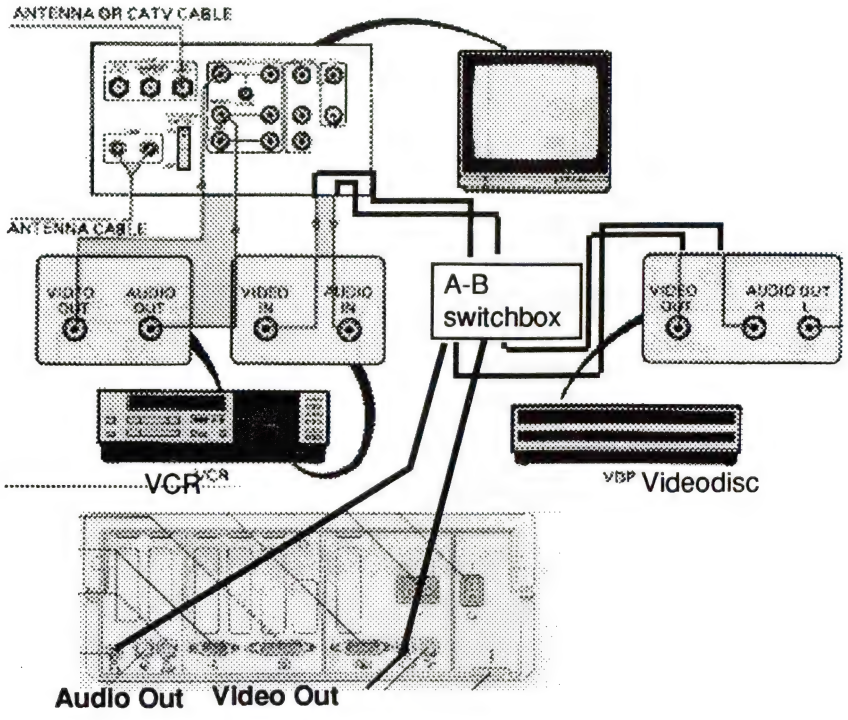
be especially handy with you want to switch from a GS stack to live video of the author explaining how he did it, and back again. Or switch to something from a second VCR. Or a 2nd computer. See the diagram on the next page for a graphic look at the setup.

The reason we recommend two AB boxes? Because, while the second one is specifically set up for both Audio and Video, as well as has 4 sources, the first one only has three sources and only claims to work with Audio. Here's a little secret. To wires and switches Audio and Video are no different at all.)

Ok, so what's the deal with Radio Shack? By now you must be certain that RWP must own stock in Radio Shack or something. Nope. The simple truth is that Radio Shack has three great things going for it. First, they have every gizmo and gadget you might ever need in your quest for true multimedia. Second, they have employees that are generally helpful, even for a $2 item. And, finally, they have stores *everywhere*!

What more can you ask?

Using more than one video source in a recording (from the previous page). Although this is covered in greater detail in the next section (which deals with the Mr. Cameraman Extra if you're using an Apple IIgs), the basic idea is the use of an A-B switch box to allow you to choose which device you'd like to record from at any time during the sequence.

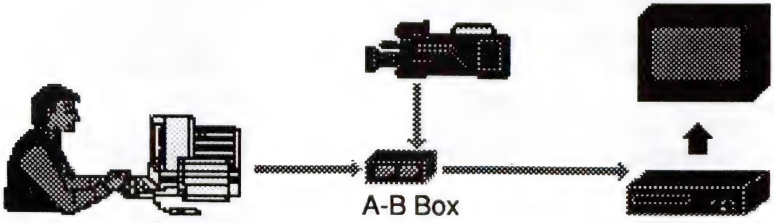


Mr. Cameraman

If you're fortunate to be using an Apple IIgs as your computer, this section covers something special just for you! HyperStudio 3.1 supports programs known as "Extras" (maybe you've noticed that as a menu option in the program. One very special "Extra" is included in the Multimedia Recording Kit just for you. To make use of this "Extra", you'll not only need HyperStudio, but also an Apple Video Overlay Card, ComputerEyes digitizing card (or both). If you don't own either of those cards, the rest of this section may convince you to buy one! Further details and examples are contained on the HyperStudio stack that can be found on the disk included with the Multimedia Recording Kit.

Why Mr. Cameraman?
If you're only video-taping the computer, you miss not being able to see the actual person presenting the project!

One low-tech answer is to just buy a $14 box from Radio Shack, called an "A-B" switch box, that will let you manually choose which video signal is going to your VCR and classroom TV. Because the switch box has TWO switched inputs, it can route both the sound and video picture from either the computer (with its sound), or the video camera image (and its sound from the microphone pick-up) to the VCR.



There is only one disadvantage to this approach: It requires that you manually switch between the camera and the computer. If the presenter gets busy talking, it's easy to forget to switch from one to the other, and the final tape will not be as interesting to the viewer. Why? Because there will be places on the tape where the presenter is talking for a long time, with just a static computer screen to watch.

The "Mr. Cameraman" HyperStudio Extra offers another approach! Let's look at three different approaches to recording video depending on your setup.

If you own an Apple II video Overlay Card, here's what you can do with Mr. Cameraman and HyperStudio, but first, a word about the Apple II Video Overlay Card ("VOC"). What the VOC lets you do is to route BOTH the video camera picture AND the computer screen image into a card within the computer, and then electronically select which image will go out to your VCR and TV screen.

What "Mr. Cameraman" does is to automate the selection process by waiting for a set period of inactivity from the presenter (for example, 20 seconds), and then automatically turning on the VOC, and showing the "live" camera image on the recording VCR and TV. The moment the mouse is moved or clicked, the image instantly returns to the computer graphic display.

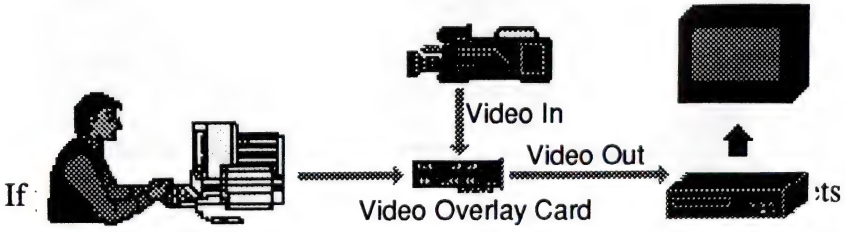
The advantage of this is that your final videotape has an almost professional look to it because of the smooth switchbacks betweeen the computer screen and the presenter.

As mentioned earlier, the Video Overlay Card ("VOC") can automatically switch between the computer image and the picture from a video camera.

To turn on Mr. Cameraman and use it with a video overlay card, you would first make sure that the "Video Out" from your video camera was plugged into the "Video In" connection of the VOC. This connection is located at the back of the GS when the VOC is installed.

The VCR and your TV is connected to the Video Out connection of the VOC.

To turn on Mr. Cameraman, you would pull down the Extras menu, and select "Cameraman" from the menu.

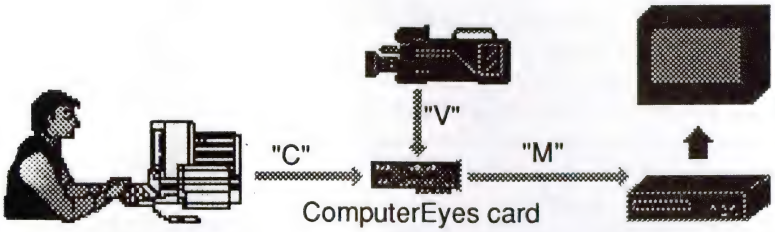


you do some "magic" that will not be found in anywhere else. To understand this trick, first completely forget for the moment that the ComputerEyes card is used to digitize video images. This application of the card has NOTHING to do with that!

What we're really going to do here is exploit the fact that the ComputerEyes card CAN can be treated as an A-B switcher box. It has two video inputs: "C" (Computer) and "V" (Video). The single output is "M" (Monitor).

If you tell Mr. Camerman which slot your ComputerEyes Card is in, it will automatically switch the final image going to your VCR between the computer screen and the live camera image.

The only difference between this technique and using the VOC is that with ComputerEyes, you won't get the slow "dissolve" that is possible using the VOC. Also, the final video output from a VOC to a VCR/TV is clearer than that directly from the computer.



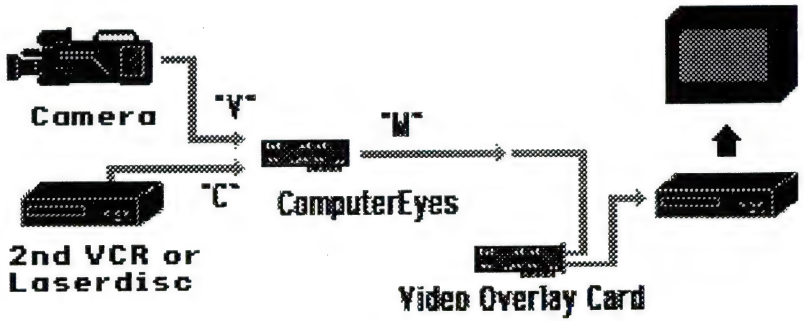
Finally, if you have both an Apple Video Overlay Card and a ComputerEyes card, you'll be able to use both in conjunction with an additional video source. This "Advanced User" method of combining both ComputerEyes and the Video Overlay Card requires that you have a clear understanding of how each works.

Remember, from previous discussion here, that ComputerEyes could be used as an "A-B" switcher, to choose with OUTPUT was going to the VCR/TV? (i.e., either the computer screen or the video camera, if you didn't have a VOC.)

Well, suppose you're presentation stack uses a 2nd "playing" VCR, or a laserdisc, AND you want to use Mr. Cameraman? How will the system know which video image to put on the screen?

Well, with Mr. Cameraman, you can use ComputerEyes to let the

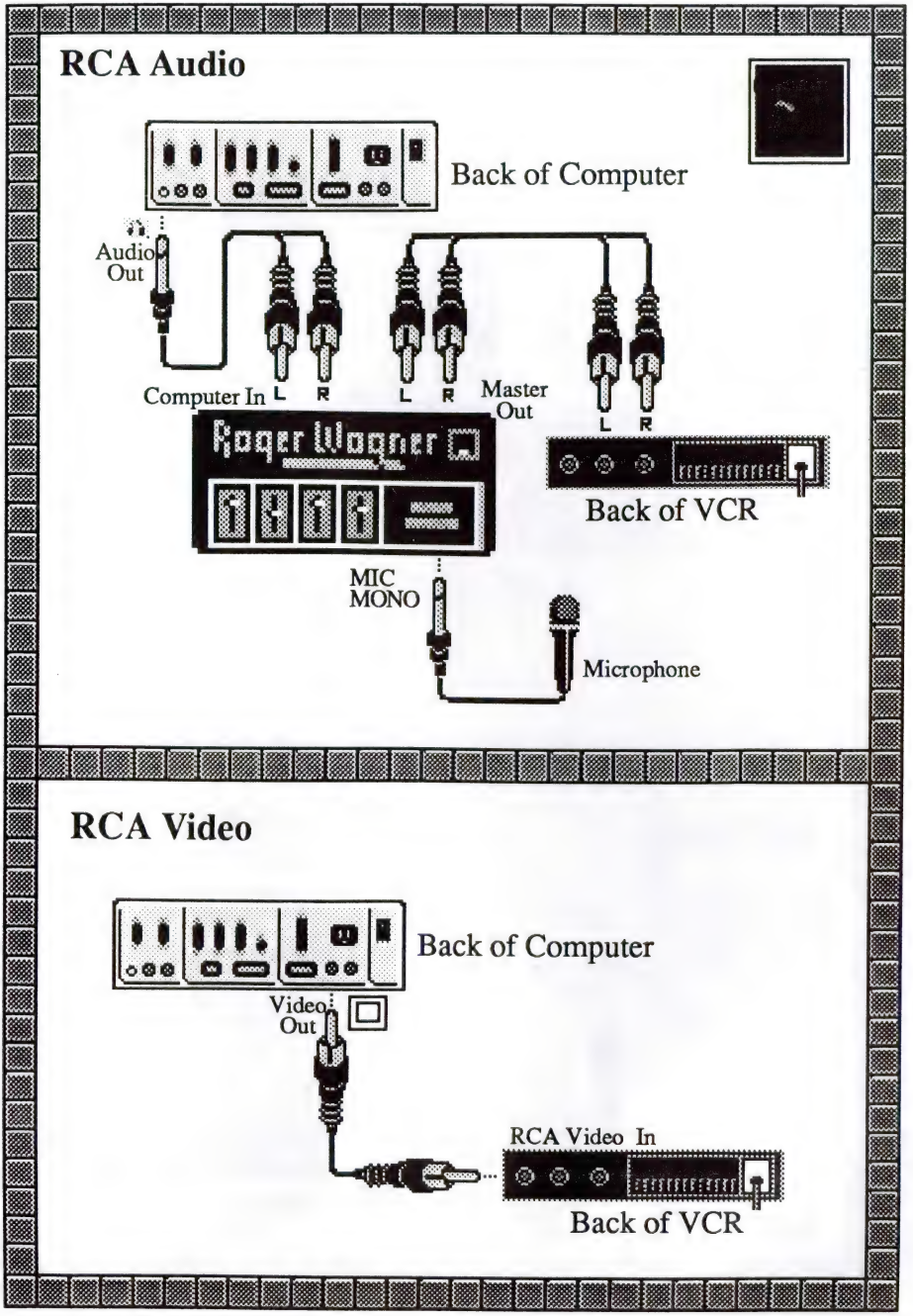
"regular" video source come through the VOC when the screen isn't "faded to video", and Mr. Cameraman will get the video from the "V" connector of ComputerEyes when it DOES fade.



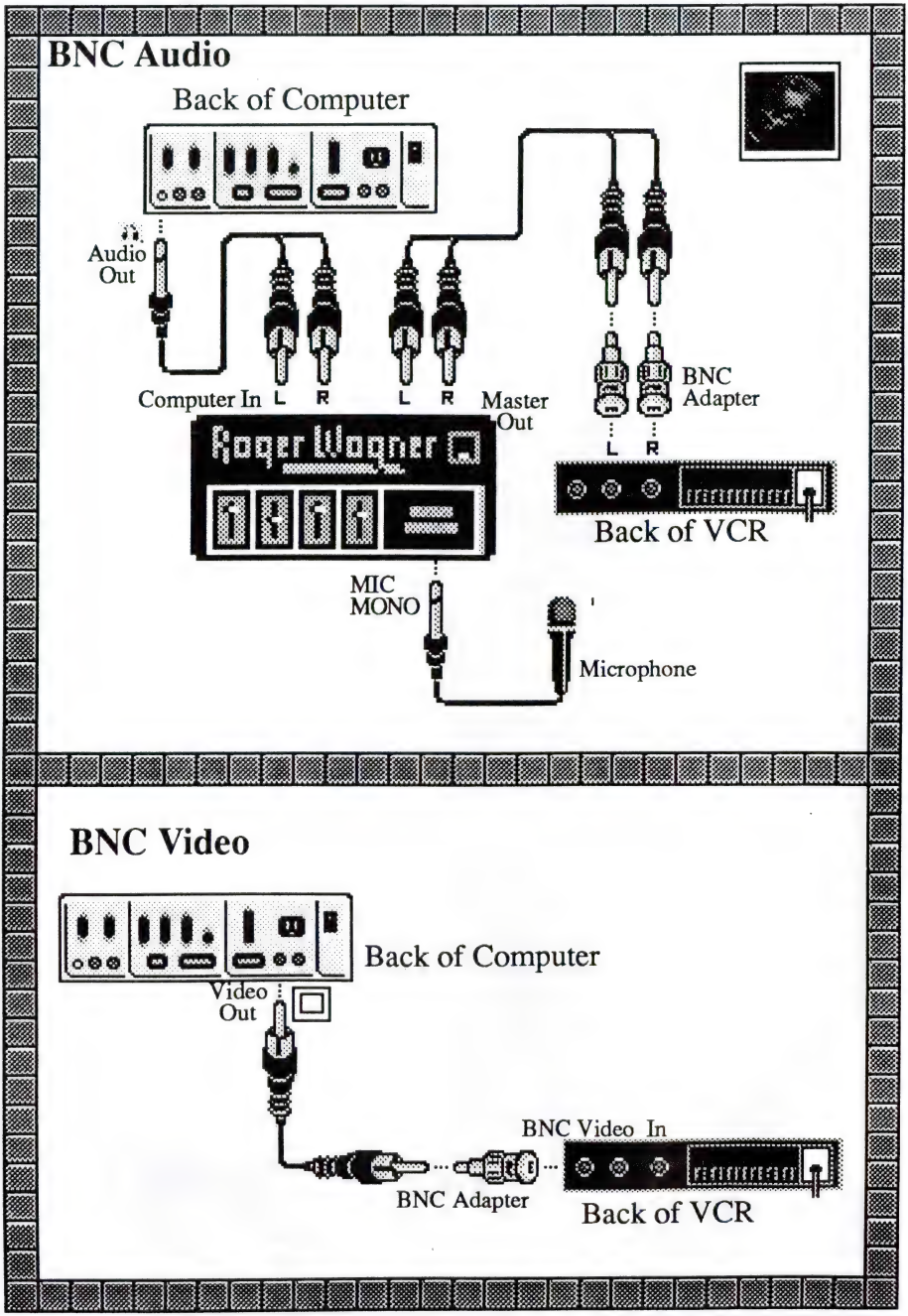
For further information concerning using and installing the Mr. Cameraman Extra with your Apple IIgs and HyperStudio, please run the stack that is contained on the disk which came with your Multimedia Recording Kit.

For those of you hoping to do something similar to this on a different computer model (Macintosh, for example), keep in mind that Apple does not produce an overlay card for that model. Luckily, third party manufacturers have come up with solutions that allow video overlay, but they also require a Macintosh computer with a NuBus slot and typically cost $2000 and up. Contact your local Apple dealer to get their suggestions if you plan on purchasing a card for your Macintosh - local support would be a great help!

Appendix A: RCA Connection Overview



Appendix B: BNC Connection Overview



Appendix C: RF Modulator Connection Overview